

WHAT IS CLAIMED IS:

1. A method for manufacturing a transparent silica glass luminescent material comprising:

    a pressurizing process for pressure molding silica fine particles and forming a pressure molding; and

    a baking process for baking the pressure molding under a temperature condition that a structural defect is generated and held without being relaxed.

2. A method for manufacturing a transparent silica glass luminescent material comprising:

    a pressurizing process for pressure molding silica fine particles and forming a pressure molding; and

    a baking process for baking the pressure molding at a temperature in a range of 500°C to 1400°C and in a time range of 100 minutes to 300 hours.

3. A method for manufacturing a transparent silica glass luminescent material comprising:

    a pressurizing process for pressure molding silica fine particles and forming a pressure molding; and

    a baking process for baking the pressure molding at a temperature in a range of 900°C to 1000°C and in a time range

of 120 to 200 hours.

4. A method for manufacturing a transparent silica glass luminescent material according to claims 1 to 3, wherein the silica fine particle is fumed silica which is synthesized by a vapor phase method and is a high-purity nano-size silica fine particle having a particle size in a range of 1 nm to 100 nm.

5. A method for manufacturing a transparent silica glass luminescent material according to claims 1 to 4, wherein silica fine particles are mixed with inorganic material particles having semi-conductivity and/or conductivity to be pressure molded and baked.

6. A method for manufacturing a transparent silica glass luminescent material according to claim 4, further comprising a pre-heat treatment process for subjecting fumed silica to heat treatment at 1000°C and for 2 hours before the pressurizing process for forming the pressure molding.

7. A silica glass luminescent material having an emission peak in a wavelength of 500 nm to 520 nm and a broad emission property, in which a full width at half maximum (FWHM) is 200 nm to 300 nm, in a spectrum of photoluminescence (PL).

8. A silica glass luminescent material having a first emission peak in a wavelength of 400 nm to 520 nm, having a second emission peak in a wavelength of 640 nm to 660 nm and indicating a broad emission, in which a wavelength ranges from 300 nm to 800 nm in a wavelength range of visible light, in a spectrum of photoluminescence (PL).

9. A silica glass luminescent material, wherein the silica glass luminescent material according to any one of claims 1 to 8 has transparency that a visible light permeation rate at a wavelength of 600 nm is not less than 75%.

10. A light emitting device, wherein a transparent silica glass luminescent material obtained by a manufacturing method according to any one of claims 1 to 6 or a silica glass luminescent material according to any one of claims 7 to 9 is employed as a fluorescent substance.